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The active Sun and its implication for the heliosphere
no preference

Application of Probabilistic Neural Network on Automatic Identification of Solar Coronal Loops

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Identification of solar coronal loops from EUV images is a key process in data analysis and coronaseismology. Here, we used a Probabilistic Neural Network as an automated tools for identification of solar coronal magnetic loops from sequences EUV images. Using the 2-D B-Spline method, the loop of an image are labeled. The Zernike moments of loops are calculated. The Zernike moments of an image are rotation, scaling and translation invariant. These array moments are feed to the network as our train set. In the similar manner, the next sequences images are tested using the network for identification the same loops. This is done for 14 SDO/AIA 171 Å images.